

PLAIN VIEW

Update for AWPM for Wheat

AWPM for Wheat is a pest management program for greenbugs and Russian Wheat aphids

Spring 2004



Some growers know us first hand. We've been out in their fields, looking for aphids, weeds and other pests. What other growers may not know is how the methods have come in handy.

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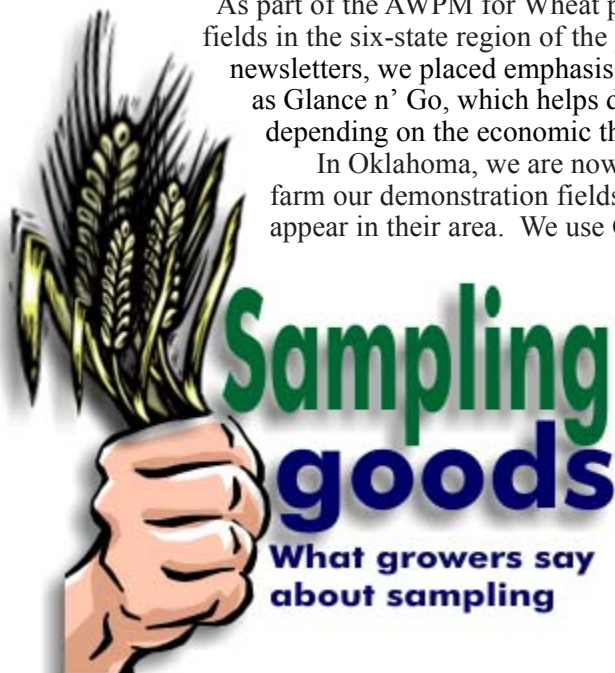
Grower found sampling helpful

As part of the AWPM for Wheat project, we sample demonstration fields in the six-state region of the project. For the last couple of newsletters, we placed emphasis on one sampling technique known as Glance n' Go, which helps determine whether to spray depending on the economic thresholds of your fields.

In Oklahoma, we are now working with the growers who farm our demonstration fields when greenbug infestations appear in their area. We use Glance n' Go sampling and other sampling methods across their entire farms to help identify fields needing insecticide treatment. We hope this will help in a number of ways.

The project aims to demonstrate the value of the pest management techniques. As discussed in the last newsletter, greenbug sampling methods, such as Glance 'n Go, help growers quickly and accurately determine the need to treat greenbug infested fields

with insecticide. With greenbugs, it is important to use sampling and economic thresholds to determine whether to treat a field, since cold weather, rain, snow, and certain natural enemies can kill greenbugs and quickly reduce greenbug infestations to less harmful levels. **see Sampling, Page two**



Our project is a collaborative effort, teaming the USDA Agricultural Research Service with growers and universities in Texas, Oklahoma, Kansas, Colorado, Nebraska and Wyoming.

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We welcome suggestions and contributions for future newsletters.

Sampling, from Page one

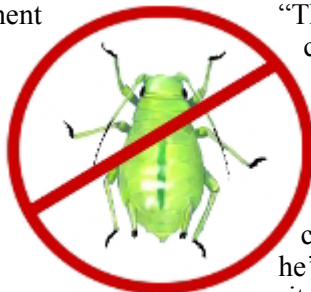
This year, greenbug infestations occurred in southwestern Oklahoma, and we were able to work closely with Bob Howard to monitor greenbugs on his farm using Glance n' Go sampling and army cutworms using standard sampling methods.

Dr. Norm Elliott, who worked with Bob said he works diligently to protect his fields.

"Bob is very smart," Elliott said. "He keeps close track of what is going on with his farm and is ready to use information in his management decision making."

This year, Bob has about 1,500 acres in wheat, and it was possible for one person to scout all 1,500

acres in less than a day using the Glance n' Go system. All fields but one were determined to be below the economic threshold using Glance n' Go and did not need treatment unless the greenbug infestations continued to grow. Wheat in the region was under stress from prolonged drought, so Bob decided he would not spray unless it rained a quarter inch or more. Fortunately it did rain. It brought the wheat back around and knocked the greenbugs back to low



levels. Weekly trips back to sample fields with the most severe infestations showed greenbug populations never recovered to high levels.

"We've had some funny rains this year," Bob said.

"They were big, hard, cold rains."

Although rain helped Bob with the greenbugs, it didn't help much with the army cutworms. He said he's been watching and monitoring both, and he did spray an 80 acre and 50 acre field for the worms. Bob also added the high number of beneficial insects probably also helped with the greenbugs. Bob felt that Glance 'n Go was a valuable tool. "He (Elliott) helped

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me out considerably," Bob said. "He probably saved me lots of money."

Pest insects and weeds vary from area to area, as do sampling techniques used to monitor them. See below for more information about sampling techniques in the northern region of the project. For a recap of the greenbug expert system and Glance 'n Go sampling, see pages 3 through 6 of this newsletter. As a part of AWPM for Wheat, we hope to help growers with the tools that can make pest management decisions easier.

"We just provided the sampling results, and he did the tough part, deciding what to spray and what not to," Elliott said.

What's Happening Around

Sampling in the High Plains

Two guides provide ideas about how to monitor and manage pests for growers in the northern part of the project region, just as we have outlined with Glance N' Go sampling for greenbugs.

The features of the High Plains IPM Guide and the Virtual Field Scout IPM Manual are similar to Glance N' Go and the greenbug expert system in their objectives.

Problems facing growers in some states will vary from problems facing growers in other states. It's important to us to give you information

that may pertain to difficulties you have in your own area.

Although greenbugs may be a problem for growers in the southern region of our project area, Russian wheat aphids cause problems that growers have struggled with in the north.

The High Plains guide gives information on integrated pest management as well as ways to help curb potential damage of insect or plant pathogens.

For example, the three basic elements

The High Plains IPM Guide and The Virtual Field Scout IPM Manual can help growers in Nebraska, Northern Colorado, and Wyoming. Some information pertains to Kansas as well.

To access these sites :

● <http://highplainsipm.org>

● <http://entomology.unl.edu/fldcrps/index.htm>

given include maintaining insect populations below levels that cause economic damage, the use of multiple tactics to manage insect populations and the conservation of environmental quality.

The Virtual Manual

includes a number of publications in pdf form about crop production, weeds and insect management.

In the next newsletter, we'll highlight specific features of both these guides.

Glance 'N Go

Determining Economic Threshold



This is the final in a three-part series.

Glance N' Go sampling is a technique that allows you to sample accurately and rapidly for greenbug infestations. It uses what is known as "sequential sampling," which means you sample until you make a decision. The technique was developed by researchers at Oklahoma State University; it was based upon research conducted in Oklahoma wheat fields.

The Glance N' Go method allows you to determine economic thresholds for insects and whether those thresholds have been exceeded in your fields. By using this method, you make control decisions based upon your crop value.

In order to use the technique properly, you must choose from two different sampling sheets. This choice is important because the distribution pattern of greenbugs is different in the fall and in the spring. You choose the sheet based upon the month of the year and the economic threshold. Please see below for the seasons and months.

The greenbug decision support system is a useful tool to help you choose the correct sampling sheet. Please see Page 4 for information on how to access the system, Page 5 on how to use the system, and Page 6 on how the greenbug decision support system fits together.

What is an Economic Threshold?

An **Economic Threshold** considers loss caused by greenbugs, the cost of control and the value of the wheat crop.

The economic threshold relates pest density to injury and economic damage.

A crop field is sampled using a method that estimates pest numbers in a time-efficient manner to determine if the treatment threshold has been exceeded.

Other useful definitions:

Control cost: is the sum of pesticide price and application cost

Crop Value: varies depending on wheat price, year to year and month to month

Sampling as well as pest and natural enemy identification are integral parts of the greenbug decision support system. See pages 4, 5, & 6 for information about the system.

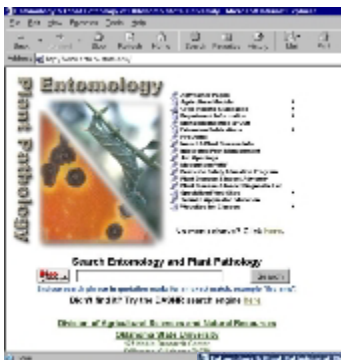
Fall: September, October, November, or December
Spring: January, February, March, April or May

For more information about Glance N' Go, you can contact Tom Royer at 405-744-9406.

To treat or not to treat: Using the Greenbug Decision Support System

1. Accessing the system

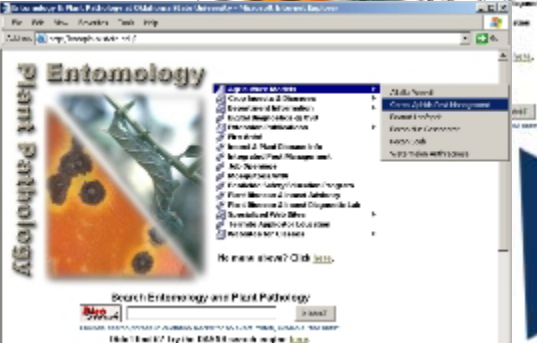
A. Access the **Greenbug Decision Support System** using OSU's Entomology and Plant Pathology Website, located at <http://www.entopl.okstate.edu>.



B. Select the **Agricultural Models** from the pulldown menu.



C. This will open another pulldown menu. Go to **Cereal Aphids Pest Management**.



D. You're now ready to determine your economic threshold by selecting the **Economic Threshold** link!

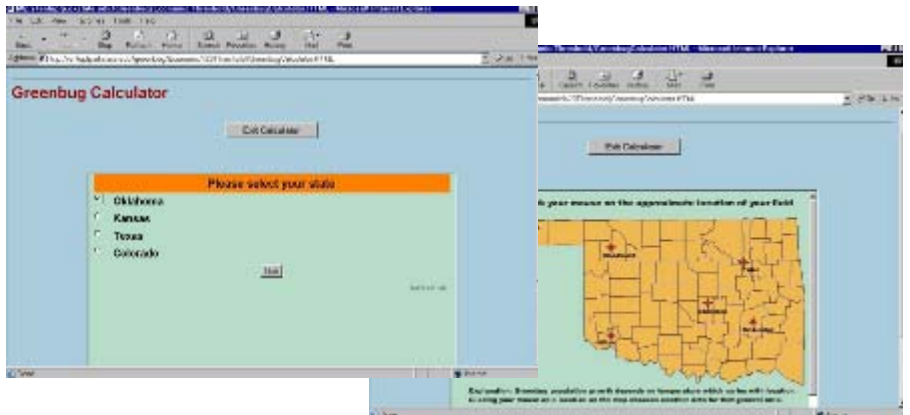


Continue to **Page 5** for information on how to use the system.

To Treat or not to Treat

2. Using the System

A. Once you reach the Greenbug calculator, its home page will look like this. **Choose your state** and then **your county**.



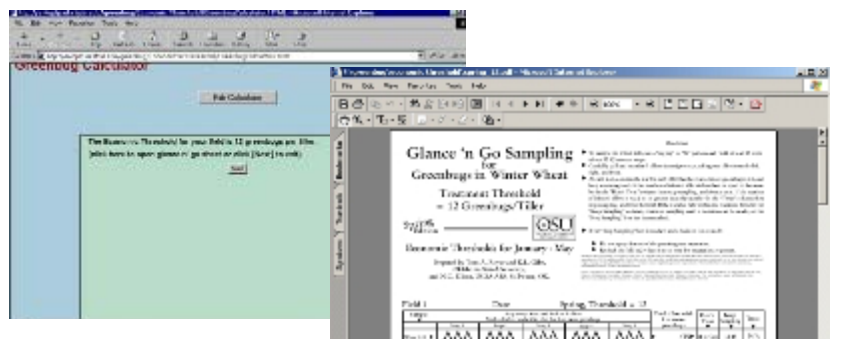
B. After choosing your state and county, **choose the month**. This step is important because thresholds are determined based upon historical weather data.



C. Finally, **enter your control cost and the estimated wheat price**.



D. Once your economic threshold is calculated, you can **open your correct sampling sheet**.



E. **Print out the sheet and take it with you into the field for sampling.**

Pulling it all together

3. Using the Greenbug Decision Support

Sampling

Quick, easy and saves money!

- Sample by walking in a “zig zag” or “W” pattern
- Walk 15 steps (or about 30 feet) between stops
- Fields larger than 80 acres should be regarded as two fields

● At each stop, CARE-FULLY pull and examine three tillers, one from left, right and front of you

● On the Glance N’ Go sampling sheet, color in a leaf if tiller has one or more greenbugs on it

● After about five stops (or 15 tillers) add up the number of tillers that had greenbugs and follow the directions on the sampling sheet.

Other helpful tools

Pest & Natural Enemy Identification

This system is also designed to help you identify pests and natural enemies in your fields. These pages not only offer pictures of various pests and natural enemies, but they give descriptions of each as well. The description for each pest comes complete with fact sheets, with more in-depth information.



The greenbug can be a formidable pest for growers in several states. However, the lady beetle, or coccinellidae, loves to feast on pests such as the greenbug.



Insecticide Selector

You can also use the Greenbug Expert System to determine what insecticide to use if you need to treat your fields.

The system leads you through a number of questions concerning application, whether you plan to run cattle, and when you plan to harvest. The selector then suggests an insecticide that you can use for treatment.

Once you choose an insecticide, the system then gives you application guidelines.

For example, methyl parathion

can be applied aerially or by ground, but application by handheld sprayer or through irrigation systems is prohibited. There is a 15 day waiting period after application before grazing or harvest.



Examples of Treat, Don't Treat and No Decision

Treat - If the number of tillers with greenbugs is greater than or equal to the number in the Treat box, then stop sampling. The field should be treated!

Don't Treat - If the number of tillers with greenbugs is equal to or less than the number in the Don't Treat box, you can stop sampling. The field should NOT be treated!

No Decision - If the number of tillers with greenbugs falls within the “Keep Sampling” box, you should continue sampling another 15 tillers. If 90 tillers are sampled and you are still sampling, quit sampling. In this case, you can either treat the field or return in 4 to 7 days to resample.

Helping us learn about you

First-year focus groups and cost-of-production surveys showed you used various types of cropping systems. This year we will explore cost effectiveness more closely.



Our team members are conducting this evaluation in six plains states (Oklahoma, Texas, Kansas, Colorado, Nebraska, and Wyoming) over a four-year period to determine the costs of production for dryland crop production systems. The purpose is to evaluate the cost effectiveness of different methods of control for Russian wheat aphid and greenbug in the high plains.

Although team members from Oklahoma State University and the University of Nebraska will conduct these surveys, they will also work with team members from Colorado State University, Texas A & M University, the University of Wyoming, Kansas State University, and the USDA-Agricultural Research Service. We are hopeful the results of this cost-of-production survey will provide a valid comparison between both cropping systems and cropping regions.

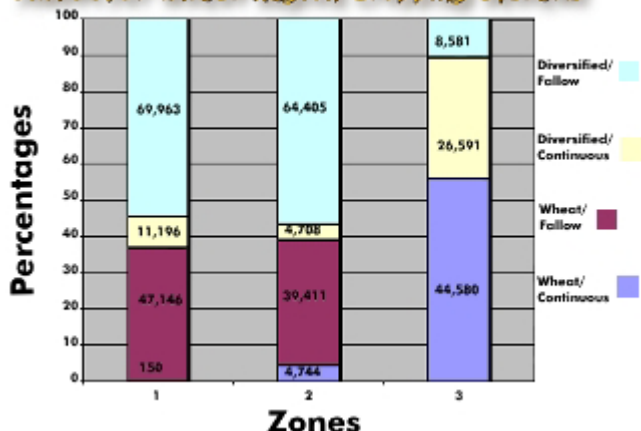
As we have said before, any information that you provide will be strictly confidential. Only summary

statistics and reports by state, region, or cropping system will be reported. A report, based on information gathered from this survey, will be made available to you upon completion of the analysis.

The information that we will collect is for the 2003 crop year. This information is intended for evaluating the scope of your operation and its influence on the associated costs.

By the end of this year, we hope to complete a summary report of the focus groups as a supplement to the current progress report. We would also like to complete enterprise and total farm budgets as well. Once we develop these budgets, we can then develop comparisons of the cost effectiveness for different types of production systems used by the participant group as a whole and evaluate changes in these systems over the time period of our project. We look forward to letting you know the results.

AWPM for Wheat Region Cropping Systems



Last year, we used focus groups and surveys to identify what types of cropping systems growers used. For more information about what they found, you can access our year-end report online. Under education and evaluation, you'll find more in-depth information about what they did and plan to do.

Harvesting Great Ideas



We've updated the AWPM for Wheat website!

- A new Elements page that shows the various aspects of AWPM for Wheat, and provides information that's useful to you.
- New county maps that help show where AWPM for Wheat is.
- Newsletter pdfs are now bookmarked for easier access.
- Our annual report is now on our home page.

Click to find out!

As always, we are open to suggestions. If you have any ideas or information you'd like to share, please let Diane Varner know. You can do this by email her at dvarner@pswcr1.ars.usda.gov or by phone at 405-624-4141, ext. 232.